

What is claimed is:

1. Apparatus comprising a moveable electrical coil adjacent a magnetically permeable structure, wherein the coil is latched by magnetic flux passing across a gap extending into the structure, and wherein the coil is subsequently unlatched by application of current to the coil, said current substantially reducing the magnetic flux across the gap and inducing movement of the coil away from the gap.
2. The apparatus of claim 1, wherein the magnetically permeable structure comprises a laterally extending pole member along which the coil moves and a shunt member coupled to the pole member and into which the gap extends.
3. The apparatus of claim 2, wherein the magnetically permeable structure further comprises a support member coupled to the pole member and a base member coupled to the support member to form a unitary, substantially c-shaped member, and wherein the shunt member comprises an end piece coupled to the base member and the pole member opposite the support member.
4. The apparatus of claim 2, wherein the magnetically permeable structure further comprises a base member coupled to the shunt member so that the pole member, the shunt member and the base member form a unitary, substantially c-shaped member.
5. The apparatus of claim 1, further comprising a permanent magnet coupled to the structure which induces a flow of magnetic flux in said structure.
6. The apparatus of claim 1, further comprising a plate coupled to the coil through which at least a portion of the magnetic flux passing across the gap flows to retain the coil in a latched position.



7. The apparatus of claim 6, further comprising a compliant member disposed between the plate and the coil, the compliant member damping vibrations as the coil moves to a position proximate the gap.

5 8. The apparatus of claim 7, further comprising a second compliant member coupled to the coil opposite the plate, the second compliant member damping vibrations as the coil moves away from the gap to a distal extent of the structure.

10 9. The apparatus of claim 1, wherein the coil surrounds and moves laterally along said structure.

10 10. The apparatus of claim 1, wherein the coil forms a portion of a rotary actuator in a data storage device, the rotary actuator supporting a data  
15 transducing head adjacent a data storage medium.

11. Apparatus comprising:  
a magnetic circuit comprising a pole member and a shunt member having a gap extending therein, wherein magnetic flux is directed across the  
20 gap; and  
an actuator comprising an electrical coil adjacent the pole member and a plate coupled to the coil, wherein the actuator is latched by bringing the plate into a position adjacent the gap so that at least a portion of the magnetic flux across the gap flows through the plate to retain  
25 the plate with a retention force, and wherein the actuator is subsequently unlatched by applying a current to the coil, said current substantially reducing a magnitude of the retention force and inducing movement of the coil away from the shunt member.

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12. The apparatus of claim 11, wherein the magnetic circuit further comprises a permanent magnet which directs the magnetic flux across the gap, the permanent magnet further directing magnetic flux along the pole member so that the coil is moved along the pole member in response to the application of current  
5 to the coil.

13. The apparatus of claim 11, wherein the magnetic circuit further comprises a support member coupled to the pole member and a base member coupled to the support member to form a unitary, substantially c-shaped member,  
10 and wherein the shunt member comprises an end piece coupled to the base member and the pole member opposite the support member.

14. The apparatus of claim 11, wherein the magnetic circuit further comprises a base member coupled to the shunt member so that the pole member,  
15 the shunt member and the base member form a unitary, substantially c-shaped member.

15. The apparatus of claim 11, further comprising a compliant member disposed between the plate and the coil, the compliant member damping vibrations  
20 as the plate is moved to a position proximate the gap.

16. The apparatus of claim 15, further comprising a second compliant member coupled to the coil opposite the plate, the second compliant member damping vibrations as the coil moves away from the gap to a distal extent of the  
25 pole member.

17. The apparatus of claim 11, wherein the coil surrounds and is adapted for lateral movement along the pole member.

30 18. The apparatus of claim 11, wherein the actuator is characterized as a rotary actuator in a data storage device, the rotary actuator supporting a data transducing head adjacent a data storage medium.



19. Apparatus comprising:  
a moveable electrical coil adjacent a magnetically permeable structure; and  
means for latching the coil with respect to the structure with a variable  
retention force.